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EXAMINER

LAMB, TWYLER MARIE

ART UNIT PAPER NUMBER

2622

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,868

Applicant(s)

VIVES ET AL.

Examiner

Twyler M. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 15-17, 20, 21 and 23-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-6, 20, 21 and 26-32 is/are rejected.
- 7) ☒ Claim(s) 23-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 20 is objected to because of the following informalities: Claim 20 depends on a canceled claim. It appears that claim 20 should now depend on claim 15.0. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-6, 21 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda (US 5,838,888) in view of Dijksman et al. (Dijksman) (US 6,079,820).

With regard to claims 1 and 27-31, Oda discloses a printer apparatus (printer 7) translating high-level printing signals (which reads on dot image made by horizontally rasterizing print data being feed to the printer) (col 3, lines 40-46) received by the printer (printer 7) from a source (information processor 1 {personal computer}) of these signals (col 3, line 64 - col 4, line 39) and responsively providing control signals effecting actions of the printer (col 4, line 40 – col 4, line 5, line 26), said printer apparatus (printer 7) comprising: print formatter circuit means (printer controller 17) receiving high-level printing signals (which reads on dot image made by horizontally rasterizing print data

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being feed to the printer) (col 3, lines 40-46) communicating from a host computer unit (information processor 1 such as a personal computer) and responsively outputting a mid-level interface communication signal including print data and print data register addresses (col 3, line 64 – col 5, line 26); printhead controller circuit means (printer controller 17 along with head driver 19) receiving said output from said print formatter circuit, and responsively providing low-level discreet control signals controlling printing actions of a printhead (printing head 21) (col 3, line 64 –col 4, line 22).

Oda does not clearly teach the printhead controller circuit means including a replaceable ASIC.

Dijksman discloses an inkjet printer that includes the printhead controller including a replaceable ASIC (Figure 17, ASIC 680, col 8, lines 16-19).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced the ASIC of Oda with the mountable ASIC or Dijksman. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Oda by the teaching of Dijksman to provide matrix control of the printhead as taught by Dijksman in col 8, lines 16-26.

With regard to claim 2, Oda also discloses wherein said printhead controller circuit means (printer controller 17 along head driver 19) includes an application specific integrated circuit (ASIC) (ASIC 39) including functions, instructions and algorithms for translating said mid-level interface communication signals into said low-level control signals (col 3, line 64 - col 4, line 39).

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With regard to claims 5 and 32, Oda also discloses wherein said printhead includes a plurality of printing orifices (col 3, lines 51-54), and said ASIC provides a "orifice select" signal indicative of a particular one of said plurality of orifices from which ink is to be ejected (col 3, lines 54-63; col 4, lines 53 – 64).

With regard to claim 6, Oda also discloses wherein said intermediate level communication interface (2-input AND circuits 32) provides exclusive communication between said print formatter circuit and said printhead controller circuit (col 3, line 64 – col 4, line 22).

With regard to claim 21, Oda discloses a method of operating an inkjet printing apparatus (printer 7) receiving high-level printing signals (which reads on dot image made by horizontally rasterizing print data being feed to the printer) (col 3, lines 40-46) from a source of these signals (information processor 1 {personal computer}) of these signals (col 3, line 64 - col 4, line 39) and responsively providing control signals effecting actions of the printer (col 4, line 40 – col 4, line 5, line 26), said method comprising steps of: providing a print formatter circuit (printer controller 17) receiving high-level printing signals (which reads on dot image made by horizontally rasterizing print data being feed to the printer) (col 3, lines 40-46) and responsively outputting mid-level interface communication signals including print data and print data register addresses (col 3, line 64 – col 5, line 26); providing a printhead controller circuit (printer controller 17 along with head driver 19) receiving said output from said print formatter circuit, and responsively providing low-level discreet control signals controlling printing actions of a printhead (printing head 21) (col 3, line 64 –col 4, line 22).

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Oda does not clearly teach the printhead controller circuit means including a replaceable ASIC.

Dijksman discloses an inkjet printer that includes the printhead controller including a replaceable ASIC (Figure 17, ASIC 680, col 8, lines 16-19).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced the ASIC of Oda with the mountable ASIC or Dijksman. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Oda by the teaching of Dijksman to provide matrix control of the printhead as taught by Dijksman in col 8, lines 16-26.

With regard to claim 26, Oda also discloses including the step of utilizing the intermediate level communication interface (2-input AND circuits 32) between the print formatter circuit (printer controller 17) and the printhead controller circuit (circuit (printer controller 17 along head driver 19) as the exclusive communication of data, address, command, and information signals between theses circuits (col 3, line 64 –col 4, line 22).

4. Claims 3-4 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda (US 5,838,888) in view of Dijksman et al. (Dijksman) (US 6,079,820) and further in view of Inose et al. (Inose) (US 6,068,359).

With regard to claim 3, Oda as modified does not teach said ASIC includes a function allowing identification of a printhead type currently installed in the printer.

Inose discloses a printer that includes a function allowing identification of a printhead type currently installed in the printer (col 4, lines 39-42; col 8, lines 51-55).

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda to include a function allowing identification of a printhead type currently installed in the printer as taught by Inose. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda by the teaching of Inose to control the color of ink to be discharged as taught by Inose in col 7, lines 27-60.

With regard to claim 4, Oda as modified does not teach said printhead controller circuit ASIC further allows said printhead controller circuit to control a temperature of said printhead.

Inose discloses a printer that includes said printhead controller circuit ASIC further allows said printhead controller circuit to control a temperature of said printhead (col 8, line 1 – col 9, line 56).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda to include said printhead controller circuit ASIC further allows said printhead controller circuit to control a temperature of said printhead as taught by Inose. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda by the teaching of Inose to control the color of ink to be discharged as taught by Inose in col 7, lines 27-60.

With regard to claim 20, Oda as modified does not teach further including the step of including in said control signals a “temperature level interrogation” signal, and utilizing said “temperature level interrogation” signal to assess a temperature of operation of said printhead.

Inose discloses a printer that including the step of including in said control signals a "temperature level interrogation" signal, and utilizing said "temperature level interrogation" signal to assess a temperature of operation of said printhead (col 8, line 1 – col 9, line 56).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda to include the step of including in said control signals a "temperature level interrogation" signal, and utilizing said "temperature level interrogation" signal to assess a temperature of operation of said printhead as taught by Inose. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Oda by the teaching of Inose to control the color of ink to be discharged as taught by Inose in col 7, lines 27-60.


Allowable Subject Matter

5. Claims 15-17 are allowable.
6. Claims 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Twyler M. Lamb whose telephone number is 703-308-8823. The examiner can normally be reached on M-Thurs 6:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Twyler M. Lamb
Primary Examiner
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